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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,556	12/13/2001	Hiroto Yasui	1232-4800	3831

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EXAMINER

CHOI, WILLIAM C

ART UNIT PAPER NUMBER

2873

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/022,556	Applicant(s) YASUI, HIROTO	
	Examiner William C. Choi	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 12-17, 19-23, 25 and 30-32 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 9-11, 18, 24 and 26-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Loha Ben
Primary Examiner

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

Receipt of the Information Disclosure Statement (IDS) with the copies of the references cited therein was received on February 24, 2003. An initialized copy of the IDS is enclosed with this office action.

Claims Rejection, Obviousness Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.3218 may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4, 13, 21, 22 and 30 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 4-10 of U.S. co-pending patent application no. 10/028,095 (Yasui et al). Although the conflicting claims are not identical, they are not patentably distinct from each other because the disclosures of both the application and the patent are directed to a zoom lens system comprising at least 5 lens units and has a diffractive optical element.

The difference between the current application and the co-pending application is that the current application specifically claims a zoom lens system comprising 5 lens units in independent claim 1, while in the co-pending application, applicant specifically claims six lens units in independent claim 1. However, applicant claims in the current application, a sixth lens unit in dependent claims 3 and 4, which meet the limitations regarding the six lens unit system of the co-pending application. The additional listed claims of the current application, regarding lens movement and power limitations, are met by the claims listed above for the co-pending application. Therefore, the claims set forth are not patentably distinct from each other.

Claim 31 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2 and 7 of U.S. co-pending patent application no. 10/028,095 (Yasui et al). Although the conflicting claims are not identical, they are not patentably distinct from each other because it is well known in the

art for image-projecting devices to have the original image formed by a liquid crystal panel. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the image-projecting device of the current application to have the original image formed by a liquid crystal panel since this is well known in the art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, 8, 12, 14, 16, 17, 19-23, 25 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekita et al (U.S. 5,253,113) in view of Soskind (U.S. 2002/0027712 A1).

In regards to claim 1, Sekita et al discloses a zoom lens system (Abstract and column 1, lines 7-14, Figure 3) comprising, in order from a more distant conjugate point for said zoom lens system, a first lens unit of a negative refractive power (column 2, lines 51-52, Figure 3, "I"), a second lens unit of negative refractive power (column 2, lines 52-53, Figure 3, "II") which moves during zooming (column 2, lines 64-67, Figure 3, "II"), third, fourth and fifth lens units (column 2, lines 53-56, Figure 3, "III"- "V"), wherein the nearest lens unit in said zoom lens system to more distant conjugate point is said first lens unit (Figure 3, "I"), and separation between each lens unit varies during

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zooming (Figure 3), but does not specifically disclose wherein said zoom lens system further comprises at least one diffraction optical element. Sekita et al does disclose, however, said zoom lens system comprising an aspherical surface to provide aberration correction (column 4, lines 55-62) and within the same field of endeavor, Soskind teaches that aspherical surfaces or diffractive optical elements can be used to provide low cost techniques to correct aberrations in optical systems (page 1, section [0015]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the zoom lens system of Sekita et al to comprise a diffractive optical element since Soskind teaches that aspherical surfaces or diffractive optical elements can be used to provide low cost techniques to correct aberrations in optical systems.

Regarding claim 2, Sekita et al discloses wherein said third lens unit has positive refractive power (column 2, lines 53-54, Figure 3, "III"), said fourth lens unit has negative refractive power (column 2, lines 54-55, Figure 3, "IV"), and said fifth lens unit has positive refractive power (column 2, lines 55-56, Figure 3, "V").

Regarding claim 5, Sekita et al discloses wherein said system comprises a stop movable during zooming (column 3, lines 2-7, Figure 3, "SP").

Regarding claim 8, Sekita et al discloses wherein said system comprises a stop between said third and fourth lens units (Figure 3, "SP").

The zoom lens of Sekita et al would inherently satisfy the conditions set forth in claims 12, 14, 16 and 17.

Regarding claim 19, Sekita et al discloses wherein said second lens unit includes one positive and one negative lens (Figure 3, "II").

Regarding claim 20, Sekita et al discloses wherein said second lens unit includes one negative lens (Figure 3, "II").

Regarding claim 21, Sekita et al discloses wherein said third lens unit includes one positive lens (Figure 3, "III").

Regarding claim 22, Sekita et al discloses wherein said fourth lens unit includes one negative lens (Figure 3, "IV").

Regarding claim 23, Sekita et al discloses wherein said first lens unit has three lenses including, in order from the more distant conjugate point, a positive lens, a negative lens and a negative lens (Figure 3, "I").

Regarding claim 25, examiner takes official notice that it is well known in the art for diffraction optical elements to include diffraction gratings. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the diffraction optical element of Sekita et al to include a diffraction grating since it is well known in the art for diffraction optical elements to include diffraction gratings.

Regarding claim 32, Sekita et al discloses an image pick-up device comprising a zoom lens system as set forth above (column 1, lines 7-10), where said zoom lens system inherently projects an image of an object onto a photosensitive body located at a less distant conjugate position for said zoom lens system (i.e. film).

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Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al (Japanese Patent Publication 5-313066) in view of Soskind (U.S. 2002/0027712 A1).

In regards to claim 1, Endo et al discloses a zoom lens system (English Translation, page 1, section [0001], Figure 1) comprising, in order from a more distant conjugate point for said zoom lens system, a first lens unit of a negative refractive power (English Translation, page 1, section [0016], Figure 1, "L1"), a second lens unit of negative refractive power, which moves during zooming (English Translation, page 1, section [0016], Figure 1, "L2"), third, fourth and fifth lens units (English Translation, page 1, section [0016], Figure 1, "L3-L5), wherein the nearest lens unit in said zoom lens system to more distant conjugate point is said first lens unit (Figure 1, "L1"), and separation between each lens unit varies during zooming (Figure 1), but does not specifically disclose wherein said zoom lens system further comprises at least one diffraction optical element. Endo et al does disclose, however, said zoom lens system comprising an aspherical surface to provide aberration correction (English Translation, page 4, section [0041]-[0043]) and within the same field of endeavor, Soskind teaches that aspherical surfaces or diffractive optical elements can be used to provide low cost techniques to correct aberrations in optical systems (page 1, section [0015]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the zoom lens system of Endo et al to comprise a diffractive optical element since Soskind teaches that aspherical surfaces or diffractive

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optical elements can be used to provide low cost techniques to correct aberrations in optical systems.

Regarding claim 15, Endo et al discloses wherein said second lens unit moves from the more distant conjugate point to a less distant conjugate point for said zoom lens system during zooming from a wide-angle end to a telephoto end (Figure 1, "L2").

Allowable Subject Matter

Claims 6, 7, 9-11, 18, 24, 26-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: in reference to the allowable claims, none of the prior art either alone or in combination disclose or teach of the claimed limitations to warrant a rejection under 35 USC 102 or 103.

The prior art fails to teach a combination of all the claimed features as presented in claims 6 and 9: a zoom lens system as claimed in claims 5 and 8 respectively, further wherein said stop moves with said third lens unit.

The prior art fails to teach a combination of all the claimed features as presented in claims 7 and 10: a zoom lens system as claimed in claims 5 and 8 respectively, further wherein said diffraction optical element is located closer to a less distant conjugate point than said stop.

The prior art fails to teach a combination of all the claimed features as presented in claim 11: a zoom lens system as claimed further wherein said diffraction optical element is located in said fifth lens unit.

The prior art fails to teach a combination of all the claimed features as presented in claim 18: a zoom lens system as claimed further wherein said lens units at both ends in said zoom lens system do not move during zooming from a wide-angle end to a telephoto end.

The prior art fails to teach a combination of all the claimed features as presented in claim 24: a zoom lens system as claimed further wherein said first lens unit has three lenses including, in order from the more distant conjugate point, a positive lens, a positive lens and a negative lens.

The prior art fails to teach a combination of all the claimed features as presented in claim 26: a zoom lens system as claimed further wherein said diffraction optical element is made of stacked layers of diffraction gratings.

The prior art fails to teach a combination of all the claimed features as presented in claim 27: a zoom lens system as claimed wherein said diffraction optical element is formed by combining two diffraction gratings having the same grating thickness and facing each other so as to make flat a surface of said diffraction optical element.

The prior art fails to teach a combination of all the claimed features as presented in claim 28: a zoom lens system as claimed wherein said diffraction optical element is formed by combining a plurality of diffraction gratings with each other.

The prior art fails to teach a combination of all the claimed features as presented in claim 29: a zoom lens system as claimed wherein said diffraction optical element is formed by combining a plurality of diffraction gratings facing each other via air.

Response to Arguments

Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art Citations

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Kato et al (Japanese Patent Publication 7-151971) is being cited herein to show a zoom lens systems comprising many of the limitations of that of the claimed invention. However, additional rejections would have been repetitive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (703) 305-3100. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

W.C.

William Choi
Patent Examiner
Art Unit 2873
April 14, 2003



Loha Ben
Primary Examiner